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ABSTRACT

This paper examines effective study strategies and how they can be used to enhance learning among African American college and university students, focusing on the importance of memory and metacognition in learning. The paper also explores factors that affect the use of these strategies and discusses how to overcome them. Effective study strategies include: identifying important information from the text; taking notes; retrieving relevant prior knowledge; organizing information; elaborating on new ideas; summarizing materials; and monitoring comprehension. Factors that may affect students' use of these strategies include insufficient knowledge about the topic they are studying; insufficient motivation to learn; the need for study skills training; and short attention spans. (Contains 13 references.) (SM)

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METACOGNITION AND EFFECTIVE STUDY STRATEGIES AMONG AFRICAN-AMERICAN COLLEGE AND UNIVERSITY STUDENTS

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Meta-cognition and Effective Study Strategies among African-American College and University Students

Many years of teaching in predominately Black Institutions have revealed that many African American college and university students do not know how they can best learn and remember information. A student who failed a test would most likely complain to the professor by saying, "I stayed up all night and studied but forgot most of the things I studied during the examination." Well, if this particular student studied for the test what was responsible for the failure? The purpose of this paper is to examine some of the effective study strategies and how they could be used to enhance learning among African American college and university students. In an attempt to do this, the importance of memory and meta-cognition in learning are discussed. The paper also hopes to explore the factors that affect strategy use and how to overcome these factors.

Experiences of teaching in predominately Black Institutions have shown that students vary considerably in

the strategies they use in studying. Some students study without concentrating; they merely look through the pages without focusing their attention on the text. There are some that study by memorizing the concepts and definitions without establishing relationships in the materials being studied. There are still other group of students who study by trying to understand what they are reading through meaningfulness, elaboration, and establishment of relationships between new ideas and old experiences. The group of students who studied using the last strategy are likely to remember what they had studied in an examination, therefore, are likely to do well in the tests.

According to Perkins (1995), the more students know about effective learning strategies, the greater their meta-cognition awareness is likely to be. It was established that students who use more sophisticated meta-cognition strategies are more likely to undergo conceptual change when such change is warranted (Gunstone, 1994; Wittrock, 1994). To be able to understand how we learn, it becomes necessary to bring to mind how the memory works. Certainly, memory is related to learning. If we did not learn

or acquire knowledge, we would have nothing to store in our memories (Davis and Palladino, 2000). Memory was therefore, defined as 'system or process by which the product or results of learning are stored for future use', p. 276.

Three kinds of memory systems have been recognized namely:

1. Sensory Memory: a memory or storage of sensory events such as sights, sounds, and tastes with no further processing or interpretations—very brief (0.5 to 1.0 second) but extensive memory for sensory events.

2. Short Term Memory: a limited capacity of the memory storage where information is processed and stored before it can be transferred to the Long Term Memory (STM lasts for only a short period, perhaps 10 to 20 seconds). Information that is not processed (that is, rehearsed, reviewed, revised or studied), fade away from the memory system. It is sometimes called 'the working memory'.

3. Long Term Memory: a memory system that has a very large capability to store information relatively permanently.

To retain information in the **LTM,** psychologists studied two kinds of rehearsal-**maintenance rehearsal and elaborative rehearsal.** When we want to cram for a test,

we use **maintenance rehearsal,** which ensues that the memory remains until it has been used and is then discarded. This explains why students sometimes forget what they have learned immediately after a test. **Elaborative rehearsal** adds meaning to material that we want to remember, for example, learning somebody's name. Some memory loss may be due to **fading or decay of memories,** but much loss appears to be caused by **interference.** When old memories that are already **stored is recalled instead of the specific memory being sought for,** proactive inhibition **is experienced.** Retroactive inhibition **is when we try to remember** old information **like remembering old telephone numbers**, the new numbers **keep coming to our minds (Davis and Palladino, 2000).**

Memory and meta-cognition are among some of the important ingredients in learning. Beihler and Snowman (2000, page 516) defined **Meta-cognition as 'knowledge about operations of cognitions and how to use them to achieve learning goal.'** It was defined by Ormrod (2000, p. 322), as **'students' knowledge and beliefs regarding**

their own cognitive processes and students' attempts to regulate their cognitive processes to maximize learning and memory.' According to Ormrod, meta-cognition includes:

- Knowing the limits of one's own learning and memory capabilities
- Knowing what learning tasks one can realistically accomplish within a certain amount of time
- Knowing which learning strategies are effective and which are not
- Planning an approach to learning task that is likely to be successful
- Using effective learning strategies to process and learn material
- Monitoring one's own knowledge and comprehension
- Using effective strategies for retrieval of previously stored information

Eggen and Kauchak (1997), stated that **Meta-cognition includes (a) peoples knowledge or awareness of their cognitive processes (b) the ability to use self-regulatory mechanisms to control processes.** They identified two types of meta-cognition namely, **meta-attention** and **meta-memory,** developed with age and

experience. According to the two authors, **meta-attention is awareness and control of attention.** A good example given is when a student turns off a radio because it is interfering with learning or when a student starts taking notes to prevent drifting off during a lecture. **Meta-memory** was defined as **knowledge about regulation of memory strategies.** In other words, using memory strategies for remembering information. Among memory strategies are **mnemonics, SQ3R, chunking, classification, organization, and scaffolding.**

Knowing how to study is a skill that must be taught. Ormrod (2000, p. 323) discussed a number of effective study strategies. This paper examines here how to used the various strategies to enhance learning among African-American college and university students.

EFFECTIVE STUDY STRATEGIES:

Identifying important information:

African American College and University students must be taught to be selective when studying from the texts. This

can be achieved by stating a list of objectives for the assigned task, for example:

- Writing the key concepts and major ideas on the chalkboard
- Asking questions that focus students' attention on important ideas

Taking Notes:

Many African-American college and university students have a problem with note taking. Research studies have established that there is a positive relationship between good note- taking and more successful classroom learning (Kiewra, 1989; Hale, 1983). **Good note taking helps students to encode and store information in the Long-Term memory.** African-American college and university students must be taught that when taking notes, **they must reflect the main ideas** of the learning materials. Note-taking, is a skill that must be encouraged within the students. Suggestions should be given to the students regarding **the most important points** to be included in the notes. Students will endeavor to write good notes if they know that their teachers would examine them. Ormrod

(2000) observed that note-taking helps students remember information even when they have no opportunity to review those notes. In addition, notes provide students an additional **means of sorting information.**

Retrieving Relevant Prior Knowledge:

Without the maintenance of equilibrium in the cognitive structure, learning cannot take place. To **achieve equilibrium in the cognitive structure, new learning must relate to the old learning. That is, model the strategy of making connections to existing knowledge as you teach students (Fig. 1).** With time and practice, our students would eventually be able to retrieve their relevant prior knowledge with little or no assistance from us (Spires et al., 1990).

Organization:

Organization is an important process in learning and retention (Nwafor, 1989). Many African-American college and university students learn more effectively if the task to be learned is organized. **Information that is organized is**

stored and retrieved more easily than unorganized information. One useful strategy of organizing information is outlining the material. This strategy has been found to be helpful in teaching low-achieving students (Wade, 1992). **Another strategy that was suggested for helping students to organize is making concept map. Concept Map is a diagram of concepts within an instructional unit and the interrelationships among them (Fig. 2).**

Encourage students to organize their classroom materials. These should include notes, assignments, and other class activities.

Elaboration:

African-American college and university students should be taught how to engage in meaningful learning. They should be taught how **to use their prior knowledge to expand on a new idea**, and by so doing, **learn how to store more information**. Anderson (1990) noted that the more students use the things they already know to help

them understand and interpret it, the more effective they will store it in Long Term Memory.

It is therefore, suggested that teachers and professors should model elaboration, give students higher level questions to consider as they read. It is also important to teach students how to generate their own elaborative questions.

Reciprocal teaching is a strategy that provides an effective means of showing students how to elaborate as they read. In this strategy, students read, listen, and take turns asking teacher-like questions from their classmates.

Summarizing;

Summarizing is another important strategy discussed. According to Spivy (1997), it involves three processes, which include:

- Separating important from unimportant information
- Considering details into more general ideas
- Identifying important relationships among those general ideas

It has been observed that African-American college and university students have difficulties summarizing materials. To enhance their learning, it is suggested that they be asked to summarize what they hear and read on regular basis. In other words**, give students practice in summarizing a body of information.**

Monitoring Comprehension:

Effective students monitor what they know or learned and those they do not know. Successful students engage in comprehension monitoring (Ormrod, 2000, p. 330). It is suggested that **students be taught how to monitor their comprehension by encouraging them to 'test' themselves and by asking questions both as they study and a later time.** It is by asking questions periodically that students find out whether they are learning the things they read or not. It is also important for students to follow up their studying with test periodically.

FACTORS THAT AFFECT STRATEGY USE:

Knowledge Base:

Ormrod (2000) identified knowledge base as a factor in strategy use. It affects strategy use in that when students do not have sufficient knowledge about a topic they are dwelling with, it tends to hinder their comprehension. To avoid this problem, **students must be taught to make connections between old learning and new learning through the use of meaningfulness, organization, and elaboration,** when learning.

Motivation:

Another factor that affects strategy use is motivation. Motivation is a necessary tool in learning. This is because **motivation does not only enhance cognitive processing, but leads to increased performance**. Fostering the motivation to learn among African-American college and university students becomes very important at this time. Ormrod suggested some ways motivation could be fostered and these include:

- Relating subject matter to students' present and future needs
- Capitalizing on students' interests
- Modeling our interest in the subject matter
- Communicating our beliefs that students want to learn
- Focusing students' attenion on learning goals rather than performance goals

Study Strategy Training:

African-American college and university students should be exposed to effective study skills training programs that include:

- Time management to help them plan when and how long to study
- Effective learning and reading strategies
- Note-taking strategies
- Comprehension-monitoring strategies
- Test taking strategies

Short Attention Span

Based on personal experiences in teaching in Black Colleges and Universities, it has been observed that some

African-American students have short attention span. Teachers and professors should plan their lessons and present them in such a way that students' interest is attracted and maintained. **The use of transparencies, maps, graphs, problem-solving activities, thought provoking questions, role- playing activities, relevant examples that attract students' attention, and demonstrations, can help attract and sustain students' attention. In other words, active learning should be promoted.**

Conclusion

This paper has dwelt on the memory as it relates to learning and remembering. The concept of meta-cognition was extensively discussed and it was established in this paper that both memory and meta-cognition are important factors in learning. Some of the effective study strategies and how they could be used to enhance learning among African-American students were examined. The factors that affect strategy use were discussed and suggestions were made.

References

Anderson, J. R. (1990). **Cognitive Psychology and its implications, (3rd ed.).** New York: W. H. Freeman.

Biehler, R. and Snowman, J. (2000). **Psychology Applied to Teaching, (9th ed.).** New York: Houghton Mifflin Company.

Davis, S. F. and Palladino, J. J. (2000). **Psychology, (3rd ed.).** New Jersey: Prentice Hall.

Eggen, P. and Kauchak, D. (1997). **Educational Psychology, (3rd ed.).** New Jersey: Prentice Hall.

Gunstone, R. E. (1994). **The Importance of Specific Science Content in the Enhancement of Meta cognition.** In Ormrod J. E. (2000). Educational Psychology, (3rd ed.). Ohio: Merrill.

Hale, G. A. (1983). Students' predictions of prose forgetting and the effects of study strategies. **Journal of Educational Psychology, 75, 708-715.**

Kiewra, K. A. (1989). A review of note-taking: The encoding-storage paradigm and beyond. **Educational Psychology Review, 1, 147-172.**

Nwafor, B. E. (1989). The Importance of Structure in Learning and Retention. **In Learning Effectiveness in Nigerian Schools and Colleges.**

Ormrod, J. E. (2000). **Education Psychology, (3rd ed.).** Ohio: Merrill.

Perkins, D. N. (1995). **Outsmarting IQ: The Emerging Science of Learnable Intelligence.** New York: Free Press.

Spires, H. A. and Donley, J. (1998). Prior Knowledge Activation: Inducing engagement with Information

Texts. **Journal of Educational Psychology,90, 249-260.**

Spivey, N. N. (1997). **The Constructivist Metaphor: Reading and the Making of Meaning.** San Diego: Academic Press.

Wade, S. E. (1992). **The Role of Interest in Learning and Development.** Hilsdale, New Jersey: Erlbaum.